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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,491	04/02/2001	Chen-Jung Chien	HT2000-002	8580

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EXAMINER
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DAVIS, DAVID DONALD

ART UNIT	PAPER NUMBER
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2652

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/822,491

**Applicant(s)**

CHIEN ET AL.

**Examiner**

David D. Davis

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/30/01</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Claims 1-14, as currently set forth, are rejoined, to expedite prosecution, because applicant's arguments are persuasive with respect to the claims as *currently* set forth.

### ***Information Disclosure Statement***

2. Receipt is acknowledged of the Information Disclosure Statement (IDS) received May 30, 2001.

### ***Specification***

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Rejections - 35 USC § 112***

4. Claims 9-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, claim 8 is a product claim and claims 9-14 refer to a method of claim 8.

### ***Claim Rejections - 35 USC § 102***

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5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Simion et al (US 6,185,081). Simion et al shows in figure 6 a spin-valve abutted junction giant magneto resistive (GMR) and method for forming the GMR including substrate 52; seed layer 57 over substrate 52 and a spin valve GMR sensor element over seed layer 57. Also shown in figure 6 are abutted junctions with seed layer 70 or 72 over the abutted junctions and hard bias layer 75 over seed layer 70 or 72. Additionally shown in figure 6 is conductive lead layer 77 over hard bias 75.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2-7 and 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simion et al (US 6,185,081). In columns 5 and 6 of Simion et al, it is disclosed that seed layer 57 is formed from MgO and has a thickness in a range between 15 Angstroms and 200 Angstroms. In addition, seed layer 70 or 72 has a thickness between 10 and 200 Angstroms and is a Cr based alloy such as CrV.

Additionally disclosed in columns 5 and 6 of Simion et al is hard bias layer 75 having a thickness between 50 and 1000 Angstroms and being formed from a Co-based layer such as CoCrTa or CoCrPt or CoPt. Further shown in figure 6 is conducting lead layer 77 having a thickness between 100 and 1650 Angstroms.

However, Simion et al is silent as to the seed layer being NiCr or NiFeCr.

Official notice is taken of the fact that NiCr and NiFeCr are notoriously old and well-known seed layers utilized in GMR heads.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to substitute the seed layer of Simion et al formed from MgO with either NiCr or NiFeCr as taught in the art. The rationale is as follows: one of ordinary skill in the art at the time the invention was made would have been motivated to substitute a seed layer formed from MgO with NiCr or NiFeCr, which is well within the purview of a skilled artisan and absent

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and unobvious result, because the seed layer materials are considered to be art recognized equivalents easily interchanged based on the desired optimization of the GMR head.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Davis whose telephone number is (703) 308-1503. The examiner can normally be reached on Monday thru Friday between 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Will J. Klemow* for  
David D. Davis  
Primary Examiner  
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